REMARKS

This is in response to the Office Action dated March 7, 2006.

Attached is a Petition For Request for A One-Month Extension of Time and a check in the amount of $60 for the government fee.

Claims 1-2, 4, 17, and 25-26 have been previously canceled. Claims 3, 15-16, and 20-21 have been previously presented. Claims 5-14, 18-19, 22-24, and 27 have been currently amended.

Claims 3, 5-8, 12-14, 22-24 and 27 have been rejected under 35 USC 102(a) or (e) as being anticipated by United States Patent No. 6,889,686 to Specht. Independent claims 22 and 27 have been currently amended. Applicant requests reconsideration of the rejection.

Applicant's independent claim 22 has been currently amended to include a burner assembly having as a part thereof a single, planar burner plate having a plurality of adjustable ports or groups of adjustable ports having a center aperture surrounded by a series of adjustable ports on an annular path and arranged in adjustably spaced configuration. The single, planar burner plate is attached to the front end of the burner body and is disposed in relation to a chamber. The mixed gas/air mixture in the body mixing chamber passes through the plurality of adjustable ports having a center aperture surrounded by a series of ports or groups of such adjustable ports located in the single, planar burner plate and thereafter combusts upon passing through the adjustable ports. The adjustable ports or groups of adjustable ports having a center aperture surrounded by a series of ports located on the single, planar burner plate are adjustably arranged so as to allow the combusted mixture to be directed into the heat exchanger inlet tubes by the burner assembly. It can be easily seen that these features distinguish over the Specht '686 patent. Applicant believes that currently amended claims 22 are novel over the '686 Specht patent and, therefore, respectfully requests reconsideration of the rejection.

The '686 patent to Specht discloses a unitary burner for producing combustion gases including a burner face defined by a plurality of spaced fins for passing therethrough a combustible

gas. The '686 Specht patent does not teach the subject matter as disclosed in Applicant's currently amended claim 22 of a single, planar burner plate having a plurality of adjustable ports having a center aperture surrounded by a series of ports or group of adjustable ports arranged in an adjustably spaced configuration such that the single, planar burner plate forms a flamestrip and directs the heat and/or flame to the HX tube inlets. Therefore, Applicant believes that currently amended claims 22 and 27 are novel over the '686 Specht patent.

The '686 Specht patent discloses only the use of spaced fins provided in the form of a ribbon tray. Ribbon trays are very old and well known within the industry. The Specht fins do not have adjustable ports having a center aperture surrounded by a series of adjustable ports or group of adjustable ports on an annular path arranged in an adjustably spaced configuration. Instead, the Specht fins are formed of a sheet of material folded back and forth to provide a membrane. Clearly, a membrane is not the same as adjustable ports having a center aperture surrounded by a series of adjustable ports on an annular path as in Applicant's currently amended independent claims 22 and 27.

In addition, the Specht ribbon trays, once formed (as well as other fin arrangements) have a depth, relative to the flow direction which is different from Applicant's single, planar burner plate. Gas must flow around the edges of the Specht ribbon tray fins when in use, causing a substantially uniform pressure drop across the ribbon tray. The Specht ribbon tray, or any other form of regularly spaced fins, cannot direct the combustion gases in any particular direction. The result is that a uniform flame is produced across the area of the ribbon tray. In practice, such a uniform flame as found in the Specht patent causes the flame heat to be imparted around the HX tube inlets, as well as into the tubes themselves. This causes a significant reduction in efficiency and also damages the front vestibule holding the HX tubes in place, which can result in product failure due to the destruction of the HX inlets.

In addition, the only way in which the flames as used in the Specht patent can be directed specifically into the HX tube inlets is by suction of the gases through the HX tubes by an induction blower. The direction of the flames is therefore a function of the flow caused by the blower only and not a function of the ribbon tray, which merely provides uniform pressure drop. Applicant has experimented with such arrangements and found them to be unsatisfactory, since the flames cannot be adequately controlled.

Examiner Basichas has suggested that the replacement of the ribbon trays of Specht with Applicant's single, planar burner plate is not new or else would be considered obvious. Applicant respectfully disagrees. In order to obtain improved operation of the HX tube burner, it is necessary for the flames to leave the burner assembly and enter the HX tube inlets in a jet-like fashion, as seen in Applicant's Figure 3. In order to form a jet it is generally accepted that a burner conduit should have a depth so that the flow of gas is constrained sufficiently to generate the required flow profile along the length of the conduit. Applicant, however, has found that careful control of the size and shape of the apertures within the single, planar burner plate can allow suitable jets to be formed using only a planar member, the depth of which is inconsequential. Careful control of the adjustable port diameters, profiles and spacing can achieve varying lengths and widths of jets which direct the flame into the HX tubes as required. Applicant has found that the flame can be tailored to such a degree that it can be made to impinge on the inside of the HX tube at different controlled locations along the inside of the HX tube. This level of control has a significant impact on efficiency and emissions. While, uniform flame strips are known within the art, Applicant's single, planar burner plate having a plurality of adjustable ports having a center aperture surrounded by a series of adjustable ports on an annular path or group of adjustable ports has not been used in the manner as herein described. Specht does not disclose or make obvious such a use of a single, planar burner plate. Therefore, Applicant sincerely believes that currently amended independent claims 22 and 27, along with the dependent claims, are novel over the '686 patent to Specht.

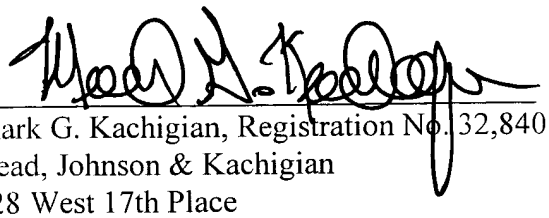
Claims 15 and 16 have been rejected under 35 USC 103(a) as being unpatentable over United States Patent No. 6,889,686 to Specht. Claims 15 and 16 have been currently amended and depend on currently amended claim 22 and are believed to be novel over the Specht patent for the same reasons as stated above.

Claims 9-11 and 18-21 have been rejected under 35 USC 103(a) as being unpatentable over United States Patent No. 6,889,686 to Specht. Claims 9-11, 18-21 depend upon currently amended independent claim 22 and are therefore believed to be novel over the Specht patent for the same reasons as stated herein.

It is believed that the application is now in condition for allowance and such action is earnestly solicited. If any further issues remain, a telephone conference with the Examiner is respectfully requested. If there are any charges associated with this amendment, the Examiner is hereby authorized to charge such charges to Deposit Account No. 08-1500.

HEAD, JOHNSON & KACHIGIAN

Respectfully submitted,



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